



Study of the dynamical complexity of the geomagnetic field

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In this work, we present an analysis of the geomagnetic field from the point of view of its complexity as a possible chaotic dynamical system. The applied method takes advantage of Takens' theorem, which allows us to reconstruct the chaotic attractor governing the dynamics that possesses the same main topological features as the real one. Analysing the minimum dimension needed to properly describe the attractor we obtain an estimation of the number of degrees of freedom of the system, that is, the number of independent variables that control the behaviour of the system. Finally, the same methodology has been applied to several temporal intervals and scales using different paleomagnetic models. Results and their implications in geomagnetic modelling are discussed.